

REMARKS

Applicant requests favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

To place the application in better form, Applicant submits herewith a substitute specification, which includes a new abstract. For the Examiner's convenience, also provided is a marked-up copy of the original specification showing the portions thereof which are being changed. The substitute specification includes the same changes as are indicated in the marked-up copy. Applicant's undersigned attorney has reviewed the substitute specification and submits that the substitute specification contains no new matter.

Claims 27-34 are presented for consideration in lieu of claims 1-26, which have been canceled without prejudice or disclaimer. Claims 27 and 34 are independent. Support for these claims can be found in the original application, as filed. Accordingly, no new matter has been added.

Applicant requests favorable reconsideration and withdrawal of the objection and rejections set forth in the above-noted Office Action.

The Examiner objected to claims 17, 18 and 20-24 as being in improper dependent form. Specifically, the Examiner asserted that claim 17 recites a device, but is dependent on an apparatus claim, that claim 18 recites a device, but is dependent on a method claim, that claim 20 recites a method, but is dependent on a an apparatus claim, and that claim 24 recites a method, but is dependent on an apparatus claim. Claims 17, 18 and 20-24 having been canceled, this objection has become moot and should be withdrawn. Nevertheless, in order to expedite

prosecution, the Examiner's comments were taken into consideration when presenting new claims 27-34. Favorable indication is requested.

Turning now to the art rejections, claims 17 and 18 were rejected under 35 U.S.C. § 102(e) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2003/0025890 to Nishinaga. Claims 1, 2, 9, 10 and 17-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese patent document number 11-297256 to Takahashi in view of U.S. Patent Application Publication No. 2002/0148961 to Nakasuji et al. Claims 3, 4, 8, 11 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Takahashi document in view of the Nakasuji et al. publication as applied above to claims 1 and 9, and further in view of U.S. Patent No. 5,040,431 to Sakino et al. Claims 5, 12, and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Takahashi document in view of the Nakasuji et al. publication as applied above to claims 1 and 9, and further in view of U.S. Patent No. 6,442,858 to Asano. Claims 6 and 14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Takahashi document in view of the Nakasuji et al. publication as applied above to claims 1 and 9, and further in view of U.S. Patent No. 6,457,864 to Chang et al. Claims 7 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Takahashi document in view of the Nakasuji et al. publication as applied above to claims 1 and 9, and further in view of Japanese patent document number 63-192864 to Matsushita et al. Claims 21-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Takahashi document in view of the Nakasuji et al. publication as applied above to claim 1, and further in view of U.S. Patent No. 6,454,177 to Sasao et al. Applicant submits that the cited art, whether taken individually or in combination, does not teach or suggest many features of the present invention, as previously recited in claims

1-26. Therefore, these rejections are respectfully traversed. Nevertheless, Applicant submits that independent claims 27 and 34, for example, as presented, amplify the distinctions between the present invention and the cited art.

In one aspect of the present invention, independent claim 27 recites a moving apparatus including a first movable body which moves in a first direction in a horizontal plane, a second movable body arranged in a location different from a location of said first movable body in a vertical direction, which moves in a second direction intersecting with the first direction in the horizontal plane, a first linear motor which moves the first movable body in the first direction, a second linear motor which moves the second movable body in the second direction, a third movable body which is moved in the first direction by receiving a force from the first movable body and is moved in the second direction by receiving a force from the second movable body, a vacuum container which puts the first, second and third movable bodies in a vacuum, a first driving force transmission rod which connects the first movable body and a moving element of the first linear motor that is located outside the vacuum container, a second driving force transmission rod which connects the second movable body and a moving element of the second linear motor that is located outside the vacuum container, and a sealing mechanism for sealing the first and second driving force transmission rods and the vacuum container. The driving force transmission rod has its longitudinal direction along the first direction and passes through a wall of the vacuum container in the first direction, and the second driving force transmission rod has its longitudinal direction along the second direction and passes through the wall of the vacuum container in the second direction.

In another aspect of the present invention, independent claim 34 recites a semiconductor device manufacturing method including the steps of setting a group of manufacturing

apparatuses for respective types of processes including an exposure apparatus at a semiconductor manufacturing factory, and manufacturing a semiconductor device in accordance with a plurality of processes by using the group of manufacturing apparatuses. The exposure apparatus uses a moving apparatus which includes a first movable body which moves in a first direction in a horizontal plane, a second movable body arranged in a location different from a location of the first movable body in a vertical direction, which moves in a second direction intersecting with the first direction in the horizontal plane, a first linear motor which moves the first movable body in the first direction, a second linear motor which is moved in the first direction by receiving a force from the first movable body and is moved in the second direction by receiving a force from the second movable body, a vacuum container which puts the first, second and third movable bodies in a vacuum, a first driving force transmission rod which connects the first movable body and a moving element of the first linear motor that is located outside the vacuum container, a second driving force transmission rod which connects the second movable body and a moving element of the second linear motor that is located outside the vacuum container, and a sealing mechanism for sealing the first and second driving force transmission rods and the vacuum container. The first driving force transmission rod has its longitudinal direction along the first direction and passes through a wall of the vacuum container in the first direction, and the second driving force transmission rod has its longitudinal direction along the second direction and passes through the wall of the vacuum container in the second direction.

By such an arrangement, the present invention provides a first driving force transmission rod for connecting the first movable body and the first linear motor having its longitudinal direction along the first direction and passing through the wall of the vacuum container in the first direction, and the second driving force transmission rod for connecting the movable body

and the second linear motor having its longitudinal direction along the second direction and passing through the wall of the vacuum container in the second container.

Applicant submits that the cited art does not teach or suggest such features of Applicant's present invention, as recited in independent claims 27 and 34.

The Takahashi document teaches an arrangement which may be considered to include a first moving body, a second body, and a third moving body. In that document, however, the first and second moving bodies are driven by a ball screw and a rotary motor. That document fails to teach or suggest at least the first and second linear motors of the present invention, as recited in independent claims 27 and 34. Also, that document fails to teach or suggest a driving force transmission rod connecting a movable body and a moving element of the linear motor being arranged outside a vacuum container. In addition, although the Takahashi document teaches arranging the ball screw away from the sample stage 3, that document fails to teach or suggest arranging the ball screw and the rotary motor outside the outer wall P of the vacuum container. Still further, that document fails to teach or suggest a sealing mechanism in the manner of the present invention recited in the independent claims. Accordingly, that document fails to teach or suggest many features of Applicant's present invention, as recited in those claims.

The Nakasuji et al. publication teaches arranging servo motors 521 and 541 for driving a stage outside a working chamber. That publication, however, fails to teach or suggest that the servo motor comprises a linear motor, and, therefore, that document fails to teach or suggest salient features of Applicant's present invention, as recited in independent claims 27 and 34.

Applicant further submits that the remaining art cited, namely, the Nishiniaga publication, the Sakino et al. patent, the Asano patent, the Chang et al. patent, the Masushita et al. document and the Sasao et al. patent, likewise fail to teach or suggest such features of

Applicant's present invention, as recited in independent claims 27 and 34. Applicant submits, therefore, that that art does not cure the deficiencies noted above with respect to the Takahashi document and the Nakasjui et al. publication.

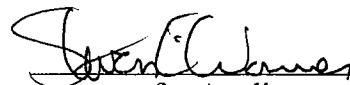
For the foregoing reasons, Applicant submits that the present invention, as recited in independent claims 27 and 34, is patentably defined over the cited art, whether that art is taken individually or in combination.

Dependent claims 28-33 also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in independent claim 27. Further individual consideration of these dependent claims is requested.

Applicant submits that the instant application is in condition for allowance. Applicant requests favorable reconsideration, withdrawal of the objection and rejections set forth in the above-noted Office Action and an early Notice of Allowance.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,

  
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Attorney for Applicant  
Steven E. Warner  
Registration No. 33,326

FITZPATRICK, CELLA, HARPER & SCINTO  
30 Rockefeller Plaza  
New York, New York 10112-3800  
Facsimile: (212) 218-2200  
SEW/eab  
FCHS\_WS 2141392\_1